

**REPLACED BY
ART 34 AND 17**

C l a i m s

1. Mobile electronic system comprising
 - output means (12,42) enabling a presentation of information to a user of said mobile electronic system;
 - a 3D magnetometer (51) performing magnetic measurements in three dimensions and providing data indicative of the current posture of said mobile electronic system based on said measurements; and
 - processing means (52,54) processing said data provided by said 3D magnetometer (51) for enabling a posture related presentation of information via said output means (12,42).
2. Mobile electronic system according to claim 1, wherein said processing means select one of at least two different modes of presentation based on said data provided by said 3D magnetometer.
3. Mobile electronic system according to claim 1 or 2, wherein said processing means present compass information (13,14,15,43-46) via said output means (12,42) based on said data provided by said 3D magnetometer.
4. Mobile electronic system according to claim 3, wherein said output means comprise a 3D display (42)

- 21 -

on which said compass information (43-46) is presented.

5. Mobile electronic system according to claim 4, wherein said processing means present a floating compass (43-46) on said 3D display (42) based on said data provided by said 3D magnetometer.
6. Mobile electronic system according to one of the preceding claims, further comprising additional sensor means (50) providing additional measurement data, wherein said processing means use said additional measurement data in addition for enabling a posture related presentation of information (43-46) via said output means (42).
7. Mobile electronic system according to claim 6, wherein said processing means use said additional measurement data provided by said additional sensor means at least for one of the following: adjusting a presentation of information via said output means and filtering signals provided by said 3D magnetometer.
8. Mobile electronic system according to claim 6 or 7, wherein said sensor means comprise a 2D or 3D linear accelerometer measuring the acceleration of said mobile electronic system in three dimensions.
9. Mobile electronic system according to one of claims 6 to 8, wherein said sensor means comprise a 3D angular accelerometer (50) measuring the angular acceleration of said mobile electronic system in three dimensions.

10. Mobile electronic system according to claim 9, wherein said 3D magnetometer (51) provides first data indicating a current heading of said mobile electronic system, wherein said 3D angular accelerometer (50) provides second data indicating a current heading of said mobile electronic system, and wherein said processing means comprise a complementary filter (52-54) combining said first and said second data indicating a current heading of said mobile electronic system.
11. Mobile electronic system according to one of the preceding claims realizing an inertial navigation system.
12. Mobile electronic system according to one of the preceding claims, wherein at least said output means are comprised in a user equipment, wherein at least said 3D magnetometer is comprised in a complementary unit external to said user equipment, wherein said user equipment and said complementary unit comprise respective connection means rigidly and electrically connecting said complementary unit and said user equipment for providing signals which are based on magnetic measurements of said 3D magnetometer to said user equipment.
13. Complementary unit for a mobile electronic system according to claim 12.
14. User equipment for a mobile electronic system according to claim 12.

15. User equipment comprising a mobile electronic system according to one of claims 1 to 11.
16. Method for use in a mobile electronic system, said method comprising:
 - performing magnetic measurements in three dimensions in said mobile electronic system;
 - determining data indicative of the current posture of said mobile electronic system based on said performed magnetic measurements; and
 - processing said data for enabling a posture related presentation of information to a user of said mobile electronic system.
17. Method according to claim 16, wherein said processing comprises selecting one of at least two different modes of presentation based on said data indicative of the current posture of said mobile electronic system.
18. Method according to claim 16 or 17, comprising presenting compass information (13,14,15,43-46) obtained in said processing.
19. Method according to claim 18, comprising presenting said compass information (43-46) on a 3D display (42).
20. Method according to claim 19, comprising presenting a floating compass (43-46) on a 3D display (42).

- 24 -

21. Method according to one of claims 16 to 20, further comprising performing additional measurements in said mobile electronic system, wherein said processing is based in addition on measurement data resulting in said additional measurements.
22. Method according to claim 21, wherein said processing comprises using said additional measurement data at least for one of the following: adjusting a presentation of information and filtering signals resulting in said performed magnetic measurements.
23. Method according to claim 21 or 22, wherein performing said additional measurements comprises measuring the acceleration of said mobile electronic system in three dimensions.
24. Method according to one of claims 21 to 23, wherein performing said additional measurements comprises measuring the angular acceleration of said mobile electronic system in three dimensions.
25. Method according to claim 24, wherein said processing comprises combining first data indicating a current heading of said mobile electronic system and second data indicating a current heading of said mobile electronic system by a complementary filtering, which first data is based on said magnetic measurements and which second data is based on said angular acceleration measurement.